

25. In a computer system including software program entities and having features providing specific functionality, at least one of said features requiring mutual support of at least two of said software program entities in order for the feature to operate properly, said computer system being subject to introduction of new features, said software program entities being subject to new releases to support said new features, said software program entities including a first and a second software program entity, a feature exchange method comprising:

storing, associated with said first software program entity, first indications of features supported by said first software program entity that require mutual support of said second software program entity, each of said features requiring mutual support of both said first and second software program entities in order to operate properly,

storing, associated with said second software program entity, second indications of features supported by said second software program entity that require mutual support of said first software program entity, each of said features requiring mutual support of both said first and second software program entities in order to operate properly,

comparing said first and said second indications with respect to each other, and

taking an appropriate action if said first indications include an indication of a feature not included in said second indications and taking said appropriate action if said second indications include an indication of a feature not included in said first indications,

said appropriate action taken so as to prevent improper operation of said computer system due to installation of a release of one of said first and second software program entities that supports a particular feature requiring mutual support of the other of said first and second software program entities, where a release of said other of said first and second software program entities supporting said particular feature has not

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been installed.

26. The method of Claim 25 wherein said features include required features and said comparing and taking steps comprise:

transferring said first indications from said first software program entity to said second software program entity, comparing, by said second software program entity, said first indications with said second indications,

transferring said second indications from said second software program entity to said first software program entity,

transferring from said second software program entity to said first software program entity, an error indication if said second indications include an indication of a required feature not included in said first indications,

comparing, by said first software program entity, said second indications with said first indications, and

wherein said appropriate action comprises taking an error action, by said first software program entity, if said first indications include an indication of a required feature not included in said second indications and taking said error action, by said first software program entity, if said first software program entity receives said error indication.

27. The method of Claim 25 wherein said appropriate action comprises stopping operation of said computer system.

28. The method of Claim 26 wherein said first and second indications comprise bit masks where a bit thereof represents a feature and wherein

each said comparing step comprises a bitwise comparison of said bit masks.

29. The method of Claim 28 wherein each said bit mask includes a reserved bit for said error indication and wherein said step of transferring said error indication includes

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setting, by said second software program entity, said reserved bit in a bit mask containing said second indications.

30. The method of Claim 28 further comprising including, in said first software program entity, a hardcoded list of said bit masks containing said first indications, and

including, in said second software program entity, a hardcoded list of said bit masks containing said second indications.

31. The method of Claim 30 wherein one of said first and second software program entities supports an optional feature, said method further comprising

including in said hardcoded list associated with said one software program entity an indication of said optional feature and an indication that said optional feature is optional.

32. The method of Claim 31 wherein said hardcoded lists include indications that said required features are required.

33. The method of Claim 25 wherein said first software program entity comprises an operating system of said computer system.

34. The method of Claim 33 wherein said second software program entity comprises a microcoded special purpose processor of said computer system.

35. The method of Claim 30 wherein each said hardcoded list comprises a plurality of said bit masks each said bit mask being identified by a word number and wherein

said step of transferring said first indications comprises transferring, from said first software program entity to said second software program entity, a particular bit mask

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with a predetermined word number from said list associated with said first software program entity, and

said step of transferring said second indications comprises transferring, from said second software program entity to said first software program entity, a bit mask corresponding to said particular bit mask having said predetermined word number from said list associated with said second software program entity.

36. The method of Claim 35 wherein a new required feature is introduced in one of said first and second software program entities and wherein said method further includes

setting a bit in an associated bit mask corresponding to said new required feature.

37. The method of Claim 30 further including maintaining, by at least one of said first and second software program entities, a list of indications of features supported by both said first and second software program entities.

38. The method of Claim 26 wherein said features further include optional features including a particular optional feature and said step of taking an appropriate action comprises the step of

taking said appropriate action if said first indications include an indication of said particular optional feature that is not included in said second indications and taking said appropriate action if said second indications include an indication of said particular optional feature that is not included in said first indications, said appropriate action selected from the group consisting of non-enablement of said particular optional feature and enablement of an alternate mode of operation to said particular optional feature.

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39. In a computer system including software program entities and having features providing specific functionality, at least one of said features requiring mutual support of at least two of said software program entities in order for the feature to operate properly, said computer system being subject to introduction of new features, said software program entities being subject to new releases to support said new or enhanced features, said software program entities including a first and a second software program entity, feature exchange apparatus comprising:

means for storing, associated with said first software program entity, first indications of features supported by said first software program entity that require mutual support of said second software program entity, each of said features requiring mutual support of both said first and second software program entities in order to operate properly,

means for storing, associated with said second software program entity, second indications of features supported by said second software program entity that require mutual support of said first software program entity, each of said features requiring mutual support of both said first and second software program entities in order to operate properly,

means for comparing said first and said second indications with respect to each other, and

means for taking an appropriate action if said first indications include an indication of a feature not included in said second indications and taking said appropriate action if said second indications include an indication of a feature not included in said first indications,

said appropriate action taken so as to prevent improper operation of said computer system due to installation of a release of one of said first and second software program entities that supports a particular feature requiring mutual support of the other of said first and second software program entities, where a release of said other of said first and second software

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program entities supporting said particular feature has not been installed.

40. The apparatus of Claim 39 wherein said features include required features and said comparing and taking means comprise:

means for transferring said first indications from said first software program entity to said second software program entity,

means for comparing, by said second software program entity, said first indications with said second indications,

means for transferring said second indications from said second software program entity to said first software program entity,

means for transferring, from said second software program entity to said first software program entity, an error indication if said second indications include an indication of a required feature not included in said first indications, and

means for comparing, by said first software program entity, said second indications with said first indications, and

wherein said means for taking an appropriate action comprises means for taking an error action, by said first software program entity, if said first indications include an indication of a required feature not included in said second indications and taking said error action, by said first software program entity, if said first software program entity receives said error indication.

41. The apparatus of Claim 39 wherein said means for taking said appropriate action comprises means for stopping operation of said computer system.

42. The apparatus of Claim 40 wherein

said first and second indications comprise bit masks where a bit thereof represents a feature, and

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each said comparing means is operative to perform a bitwise comparison of said bit masks.

43. The apparatus of Claim 42 wherein each said bit mask includes a reserved bit for said error indication, said means for transferring said error indication includes means for setting, by said second software program entity, said reserved bit in a bit mask containing said second indications.

44. The apparatus of Claim 42 further comprising a hardcoded list, included in said first software program entity, of said bit masks containing said first indications, and a hardcoded list, included in said second software program entity, of said bit masks containing said second indications.

45. The apparatus of Claim 44 wherein one of said first and second software program entities supports an optional feature, said hardcoded list associated with said one software program entity including an indication of said optional feature and an indication that said optional feature is optional.

46. The apparatus of Claim 45 wherein said hardcoded lists include indications that said required features are required.

47. The apparatus of Claim 39 wherein said first software program entity comprises an operating system of said computer system.

48. The apparatus of Claim 47 wherein said second software program entity comprises a microcoded special purpose processor of said computer system.

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49. The apparatus of Claim 44 wherein each said hardcoded list comprises a plurality of said bit masks, each said bit mask being identified by a word number,

said means for transferring said first indications being operative for transferring, from said first software program entity to said second software program entity, a particular bit mask with a predetermined word number from said list associated with said first software program entity,

said means for transferring said second indications being operative for transferring, from said second software program entity to said first software program entity, a bit mask corresponding to said particular bit mask having said predetermined word number from said list associated with said second software program entity.

50. The apparatus of Claim 49 wherein a new required feature is introduced in one of said first and second software program entities, said one software program entity being operative for setting a bit in an associated bit mask corresponding to said new required feature.

51. The apparatus of Claim 44 further including a list of indications of features supported by both said first and second software program entities maintained by at least one of said first and second software program entities.

52. The apparatus of Claim 40 wherein

said features further include optional features including a particular optional feature, and

said means for taking an appropriate action comprises means for taking said appropriate action if said first indications include an indication of said particular optional feature that is not included in said second indications and taking said appropriate action if said second indications include an indication of said particular optional feature that is not

included in said first indications, said appropriate action selected from the group consisting of non-enablement of said particular optional feature and enablement of an alternate mode of operation to said particular optional feature.

53. The apparatus of Claim 39 wherein said first and second indications comprise feature indication storage arrangements.

54. The apparatus of Claim 53 wherein said feature indication storage arrangements comprise bit masks where a bit thereof represents a feature, and

said comparing means is operative to perform a bitwise comparison of said bit masks.

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